

Dr. Padakandla Shalem Raj

Professor | Dept. of Medical Biotechnology

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Research Interest

Microbiome Dysbiosis (Gut, Ocular, Intraocular)
Probiotics & FMT in Disease Remission
Antimicrobial Resistance & Novel Taxa Discovery
Environmental Biotechnology & Bioremediation
Microbial Systematics & Metagenomics
Bioinformatics & Phylogenetic Analysis

Research Summary & Highlights

A versatile microbial ecologist with over 7 years of postdoctoral research and 5+ years of teaching experience. Expertise in microbial diversity, dysbiosis in human diseases, and discovery of novel taxa. Strong background in bioinformatics, metagenomics, and translational microbiology with proven contributions to international peer-reviewed publications, book chapters, and collaborative projects.

Education

2006-2014 Ph.D. in **Environmental Science and Technology**, **Jawaharlal Nehru Technological University, Hyderabad**
Thesis: Description of Novel Species of Purple Nonsulfur Bacteria (PNSB) from Diverse Habitats of India
2002-2005 M.Sc. in **Environmental Biotechnology**, **Jawaharlal Nehru Technological University, Hyderabad**
Thesis: Augmentation of Aromatic Compound Degradation using Pyrazine-2-Carboxylic Acid
1998-2001 B.Sc. in **Botany, Chemistry, Seed Technology**, Andhra University

Experience (Academic – 5+ Yrs; Research: 7+ Yrs; Total – 13+ Years)

Academic Experience

Apr 2024 – Present: **Professor, Dept. of Biotechnology, Malla Reddy University, Hyderabad**
Jan 2010 – Sep 2014: **Lecturer (Adhoc), JNTU Hyderabad**
Guest Faculty (2010–11, 2011–12, 2013–14, 2020–21, 2021–22): **JNTU Hyderabad**

Research Experience

Jun 2018 – Jan 2023: **Post-Doctoral Research Associate II, LV Prasad Eye Institute, Hyderabad**

- Investigated dysbiosis in bacterial and fungal microbiomes of gut, ocular surface, and intraocular fluids.
- Assessed probiotics and FMT in restoring gut microbial balance.

Oct 2014 – Jul 2017: **Post-Doctoral Fellow, Chonbuk National University, South Korea**

- Studied antibiotic-resistant bacteria using culture-dependent and metagenomic approaches.
- Identified 7 novel bacterial taxa and published their descriptions

Projects / Industrial Experience

2018–2023 **Gut microbiome dysbiosis in diabetes-related retinopathy**, LVPEI, Hyderabad
2014-2017 **Survey of Antibiotic resistant bacteria and discovery of novel bacterial taxa**, Chonbuk National University, South Korea
2005 **Environmental bioremediation projects**, JNTU Hyderabad

Selected Publications (Papers:19, Citations: 307, h-index: 9, i-10 index: 8)

- Das T., Takkar B., **Padakandla S.R.**, Shivaji S. *Gut and intraocular fluid dysbiosis in type 2 diabetes-related retinopathy in India*. Indian J Ophthalmol. 73(1):S144-S150, 2025. DOI: 10.4103/IJO.IJO_966_24 (IF: 2.0)
- Das T., **Padakandla S.R.**, Shivaji S. *Intraocular Microbiome in Diabetes and Diabetic Retinopathy: A Pilot Study*. Ophthalmol Ther 12(2):1109-1126, 2023. DOI: 10.1007/s40123-023-00660-w (IF: 3.1)
- **Padakandla S.R.**, Das T., Shivaji S. *Gut mycobiome dysbiosis in rats showing retinal changes indicative of diabetic retinopathy*. PLoS ONE 17(4): e0267080, 2022. DOI: 10.1371/journal.pone.0267080 (IF: 3.7)
- **Padakandla S.R.**, Chae J.C. *Chitinimonas naiadis sp. nov., isolated from a freshwater river*. J. Microbiol. Biotechnol. 27(7):1300–1305, 2017. DOI: 10.4014/jmb.1703.03075 (IF: 2.5)
- **Padakandla S.R.** *Antimicrobial Resistance in the Diseased Human Eye: Uveitis*. In: Shivaji, S (Ed.). CRC Press, 2024. pp 352-363. DOI: 10.1201/9781003451105-11

Scientific Contribution/Reviewing/Thesis Supervision

Thesis supervision (M.Sc.):	07	External Expert for project interviews:	01
Conference/Symposium/Meeting:	04		

Additional Responsibilities/Administrative Roles

- Scientific Member, Institutional Ethics Committee, School of Allied and Healthcare Sciences, Malla Reddy University
- Member, Institutional Scientific Committee, School of Allied and Healthcare Sciences, Malla Reddy University
- Placement Coordinator, School of Allied and Healthcare Sciences, Malla Reddy University